

PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : A47J 37/06, 37/00		A1	(11) International Publication Number: WO 00/56196 (43) International Publication Date: 28 September 2000 (28.09.00)
(21) International Application Number: PCT/TR00/00017 (22) International Filing Date: 20 March 2000 (20.03.00) (30) Priority Data: U 99/00612 19 March 1999 (19.03.99) TR U 00/00743 20 March 2000 (20.03.00) TR (71)(72) Applicant and Inventor: MERIC, Faik, Levent [TR/TR]; 4, cad. No. 31, Büyükk Sanyi-Ankara (TR).		(81) Designated States: US, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>	
(54) Title: SMOKELESS GRILL (57) Abstract An electric grill having quartz heating tubes operating at bright red temperatures are positioned above the foodstuff. A water reservoir exists below the food to receive the drippings. Vapours formed during cooking exits through a hot zone, where the odor is de-characterized.			

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

Smokless grill

RELATION and EXISTING SITUATION

Usually, it is very difficult to avoid fumes while grilling on charcoal or with
10 heating elements placed below. Obviously, burning of drippings onto the hot
surfaces is the cause of fumes. Also, it is believed that these fumes are un-healty
due to their nitrate content. Consequently, indoor grilling is not very much possible.

Cleaning the material contacting the food while grilling is another problem due
15 to the burning and carbonized food on hot parts.
Besides, vapours driven out contaminates the envirement with unpleasent odors.

EXPLANATION OF INVENTION AND BENEFITS

20 Food is placed on a perforated plane (fig's 1,2,3,5 item 5) in an oven pan (item 4)
containing water at the bottom. Drippings go directly into the cold water thus no
fumes are formed. Grilling action is done by red hot quartz electric heating rods
(item 3) which are under a reflector plate (item 2) giving intense radiative heat
energy which does the grilling action properly.

25 Grilling usually causes some undesirable odors. To avoid these undesirable odors and
fumes, cooking pan is placed in vapour tight vessel.(fig 4,5) Inside channeling of the
vessel is designed in a way that (C fig 4)vapours find their way out (3 @ fig 4)
through a hot zone.(2 of fig 4). Odor causing organic molecules change their
30 structure at hot region. This stuctural alteration eliminates the characteristic
recognition of the odor.

The unit can (or will) be produced in two versions.

- 35 i. smokless and economic model with various versions (fig's 1&2) and (fig.3)
with warm keeping zone .
pan with inside material placed underneath the heating bars at a certain distance
at no vapour tight configaration. Surface of the pan is open to envoirement.

5

ii. smokless and odorless model

same as above, but pan is inside a closed chamber (1 @ fig's 4&5) and the vapour can exit (3) only through a hot zone.(2@Fig 4) Formation of this zone can be (and will be) done either by flame (5@ fig.4 B) or by electric alternatively.(6@ fig. 4C)

10

Flame can be formed by various fuels (solid, liquid or gas) . (4@ fig.4 B)

Quartz heating tubes (3@fig.4)already operating at those molecular destruction temperatures serve for this purpose. To achieve this result inner vapour passing path is tailored accordingly. (fig. 4 C)

15

Different grilling versions such as slotted pan for placing meat carrying sticks, or turning attachment for gyro meat are also included in the idea.

OPERATION

20

Food is placed onto the perforted plate having water underneath. Pan is placed under the heating elements and energised. Both sides of the food will be grilled in turn.

25

APPLICATION

Will be produced for commercial purposes . Various models for house use as well as for professional kitchens.

30

35

5

CLAIMS

An electric grill composed of standard material (housing, electric control unit, cables etc) and quartz heating tubes placed above the food and water below .

10

Additionally, cooking chamber is vapour tight and this space is vented via a hot zone developed by flame or electric.

15

20

25

30

35

1/5

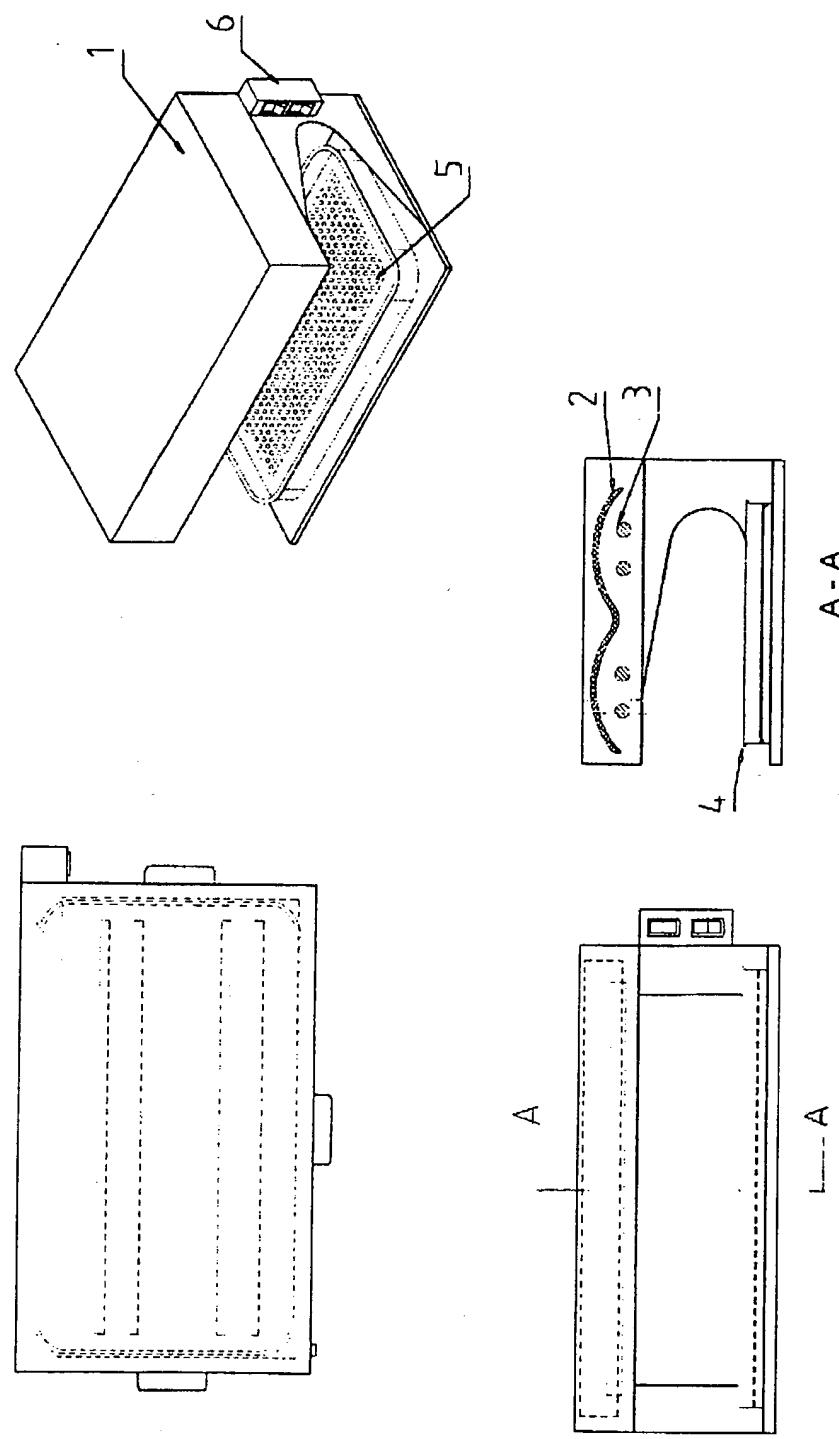
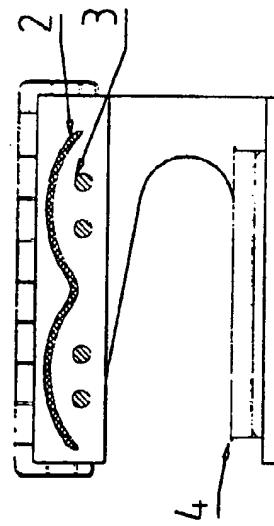
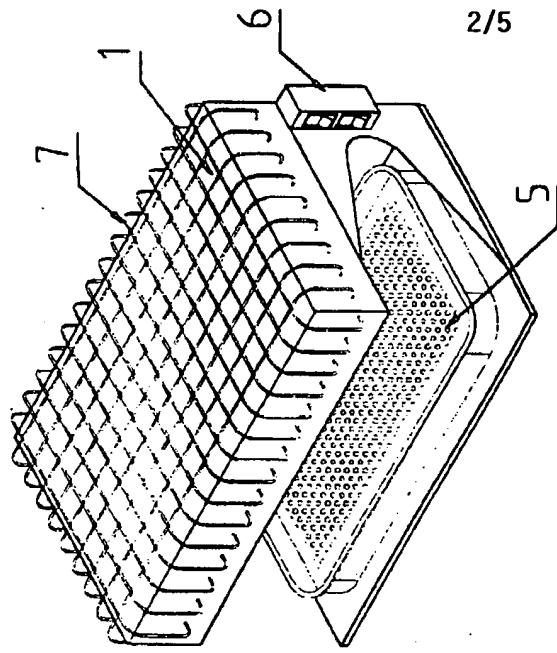
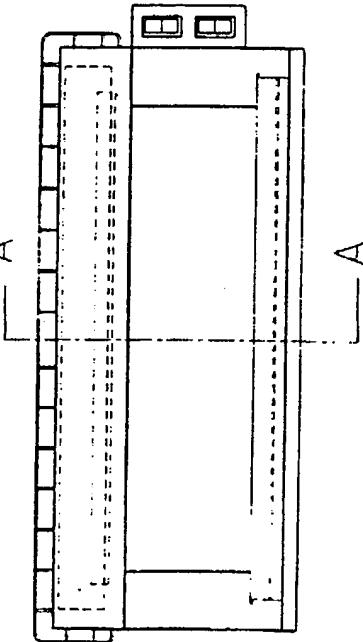
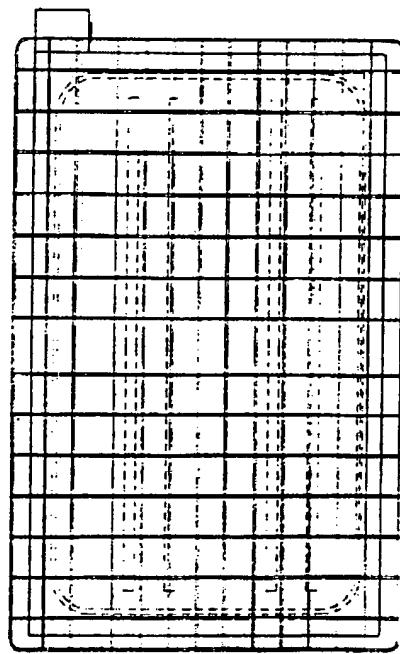


FIGURE -1

2/5



A - A
FIGURE - 2



3/5

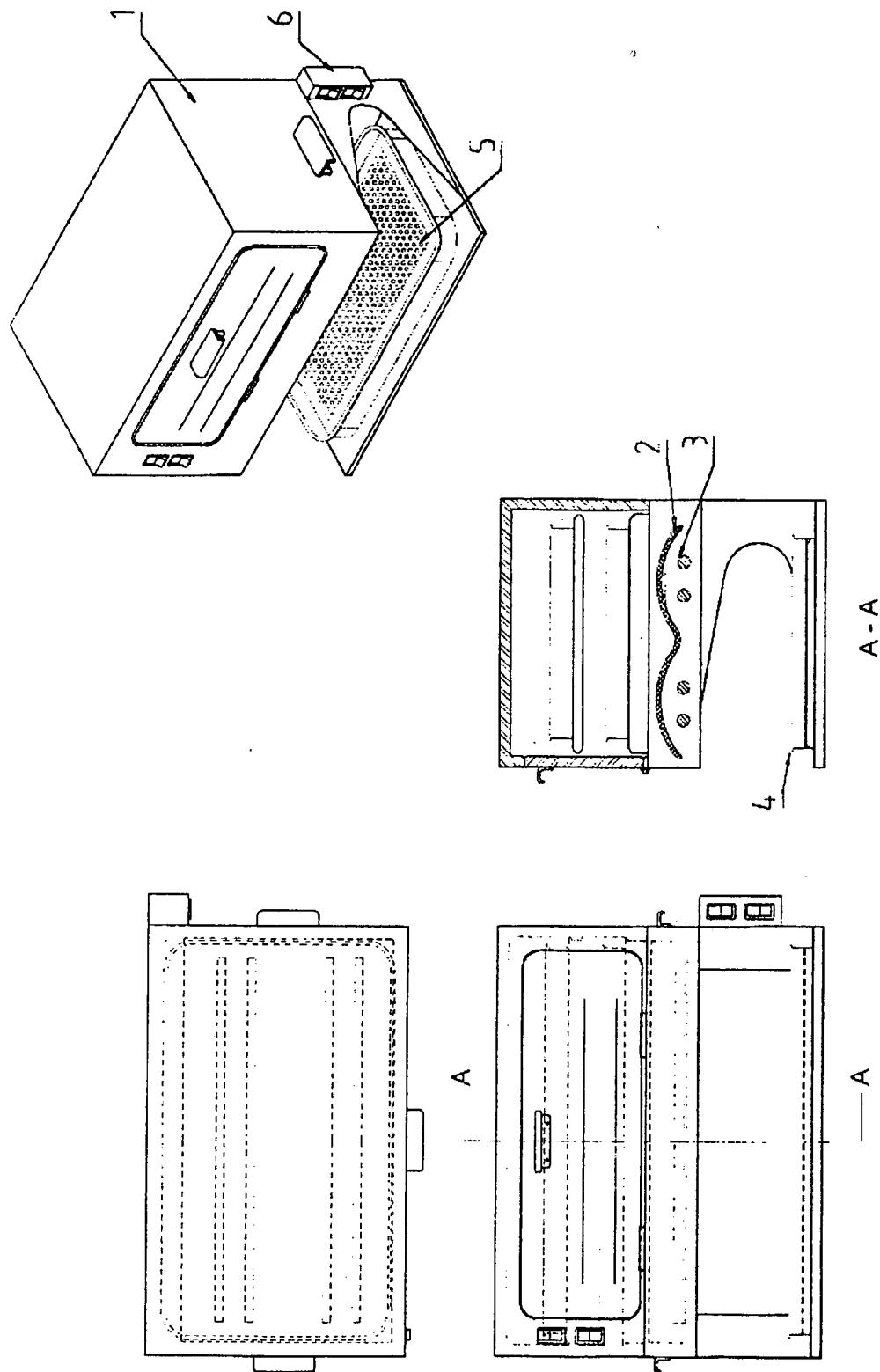
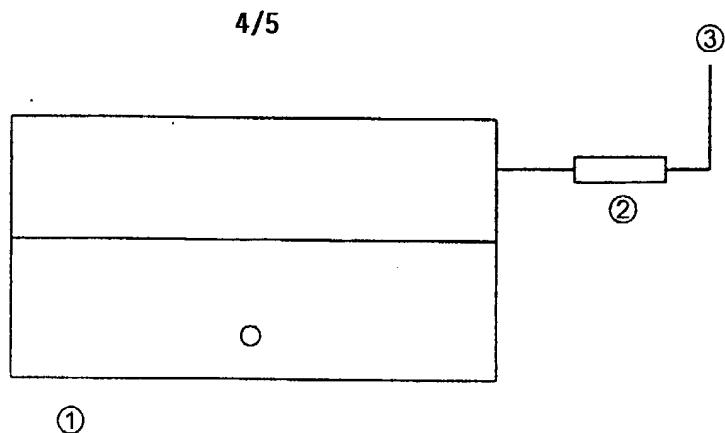


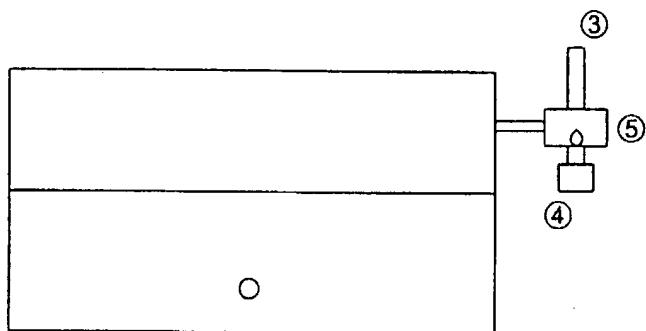
FIGURE -3

4/5

A



B



C

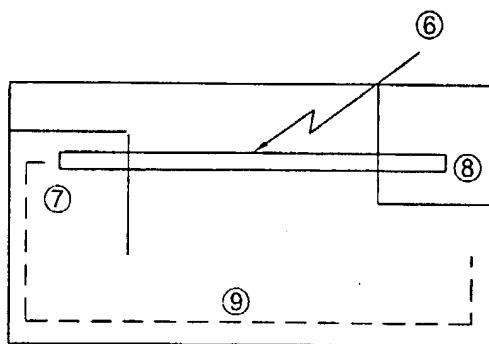


FIGURE - 4

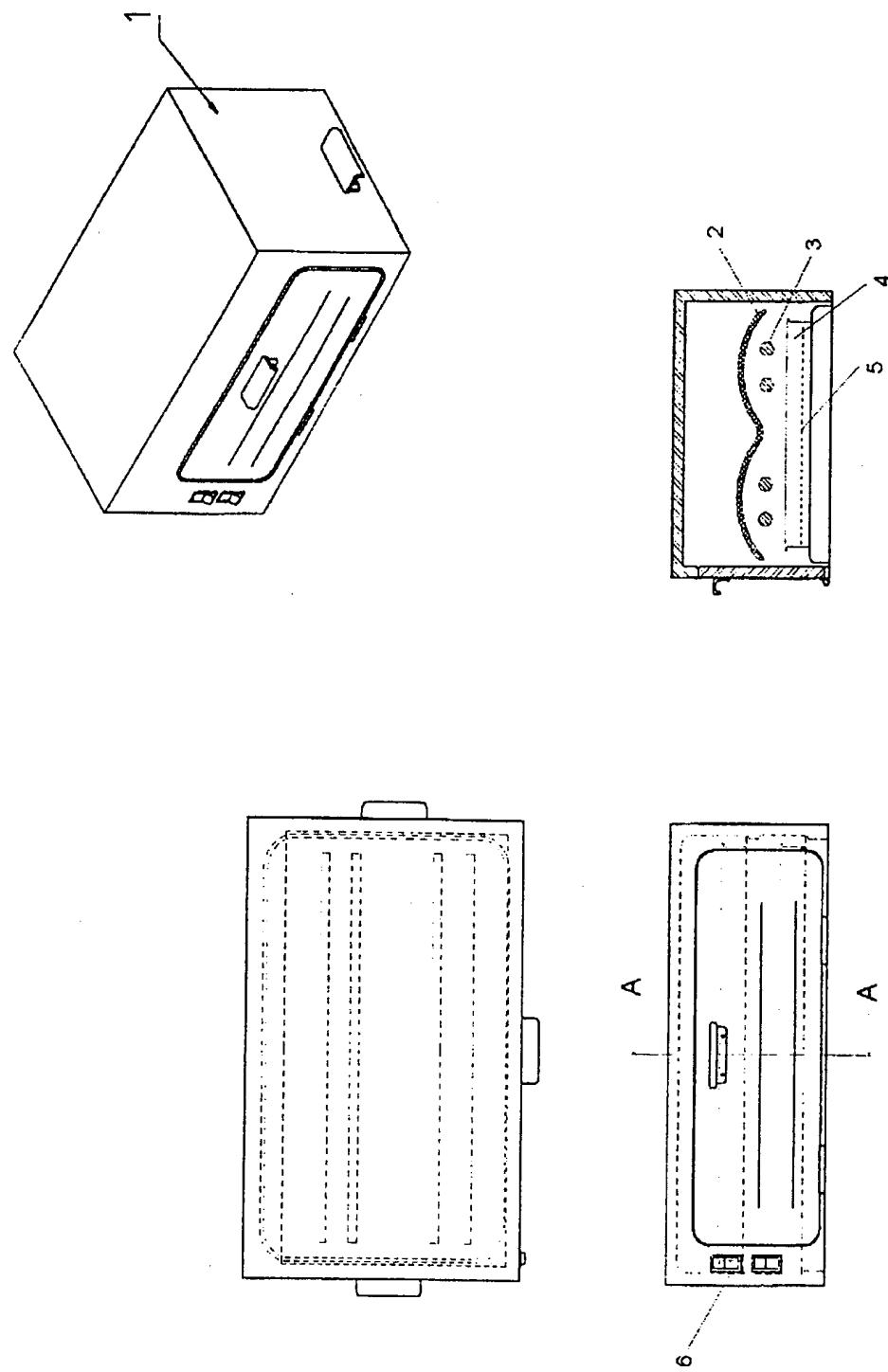


FIGURE - 5

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/TR 00/00017

Patent document cited in search report			Publication date	Patent family member(s)			Publication date
BE	A2	892776	02-08-1982	AT	E	29652	15-10-1987
				DE	C0	3373617	22-10-1987
				EP	A1	91145	12-10-1983
				EP	B1	91145	16-09-1987
				ES	U	278113	01-08-1984
FR	A1	2491317	09-04-1982			none	
FR	A1	2670274	12-06-1992			none	
FR	B1	2670274	26-04-1996				
US	A	5504295	02-04-1996	CN	A	1096664	28-12-1994
				CN	B	1051219	12-04-2000
				DE	C0	69408704	09-04-1998
				DE	T2	69408704	16-07-1998
				EP	A1	617909	05-10-1994
				EP	B1	617909	04-03-1998
				ES	T3	2113564	01-05-1998
				FR	A1	2703505	07-10-1994
				FR	B1	2703505	08-03-1996

INTERNATIONAL SEARCH REPORT

International application No. PCT/TR 00/00017
--

CLASSIFICATION OF SUBJECT MATTER

IPC⁷: A 47 J 37/06, 37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: A 47 J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, PAJ, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2491317 A1 (TRAVIN SA) 9 April 1982 (09.04.82) fig.2; claims	1
A	BE 892776 A (WERKHUIZEN RUBBENS) 2 August 1982 (02.08.82) totality	1
A	US 5504295 A (COLLAS et al.) 2 April 1996 (02.04.96) totality	1
A	FR 2670274 A1 (SEB. S.A.) 12 June 1992 (12.06.92) fig. 1; abstract	1

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

„A“ document defining the general state of the art which is not considered to be of particular relevance

„E“ earlier application or patent but published on or after the international filing date

„L“ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

„O“ document referring to an oral disclosure, use, exhibition or other means

„P“ document published prior to the international filing date but later than the priority date claimed

„T“ later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

„X“ document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

„Y“ document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

„&“ document member of the same patent family

Date of the actual completion of the international search

18 August 2000 (18.08.2000)

Date of mailing of the international search report

23 August 2000 (23.08.2000)

Name and mailing address of the ISA/AT

Austrian Patent Office

Kohlmarkt 8-10; A-1014 Vienna

Faxsimile No. 1/53424/535

Authorized officer

Seirafi

Telephone No. 1/53424/224